AMENDMENTS TO THE CLAIMS:

Claims 1-21 and 46 were pending at the time of the Office Action. Claims 46 is amended. Claims 1-21 and 46 are currently pending.

In the Claims:

1. (Previously Presented) An inert gas generating system for generating inert gas on a vehicle having a fuel tank and a fuel tank vent, said system comprising:

an inlet for receiving a flow of gas having a nitrogen component and an oxygen component from a gas source;

a heat exchanger downstream from the inlet and in fluid communication with the inlet for cooling gas received from the inlet;

a gas separation module downstream from the heat exchanger and in fluid communication with the heat exchanger for separating gas received from the heat exchanger into a nitrogen-enriched gas flow and an oxygen-enriched gas flow; and

valving operatively connected to the gas separation module selectively delivering nitrogen-enriched gas from the nitrogen-enriched gas flow to the fuel tank without delivering the nitrogen-enriched gas through the fuel tank vent, and selectively delivering nitrogen-enriched gas from the nitrogen-enriched gas flow to the fuel tank vent.

2. (Previously Presented) A system in accordance with claim 1 wherein the valving comprises a flow valve operatively connected downstream from the gas separation module to control a flow rate of the nitrogen-enriched gas flow received from the gas separation module.

3. (Previously Presented) A system in accordance with claim 1 wherein the valving comprises a fuel tank valve operatively connected between the gas separation module and the

fuel tank to control a flow rate of nitrogen-enriched gas into the fuel tank.

4. (Previously Presented) A system in accordance with claim 1 wherein the valving comprises a fuel tank vent valve operatively connected between the gas separation module and the fuel tank vent to control a flow rate of nitrogen-enriched gas into the fuel tank vent.

5. (Original) A system in accordance with claim 1 further comprising a flow sensor operatively connected downstream from the gas separation module to measure at least one of a flow rate and a pressure of the nitrogen-enriched gas flow downstream from the gas separation module.

6. (Original) A system in accordance with claim 1 further comprising an oxygen sensor operatively connected downstream from the gas separation module to measure an oxygen content of the nitrogen-enriched gas flow downstream from the gas separation module.

7. (Original) A system in accordance with claim 1 further comprising a compressor operatively connected between the inlet and the heat exchanger to increase a pressure of the gas received by the heat exchanger.

8. (Original) A system in accordance with claim 7 wherein operation of the compressor is driven by gas received from the inlet.

9. (Original) A system in accordance with claim 7 further comprising: a pressure sensor operatively connected downstream from the compressor to measure a pressure of gas downstream from the compressor; and a compressor regulator valve operatively connected to the

compressor and the pressure sensor for controlling operation of the compressor based on the pressure of the gas downstream from the compressor.

10. (Original) A system in accordance with claim 9 further comprising a processor operatively connected between the pressure sensor and the compressor regulator valve for controlling operation of the compressor regulator valve based on the pressure of the gas downstream from the compressor.

11. (Original) A system in accordance with claim 7 further comprising a compressor bypass check valve operatively connected between the inlet and the heat exchanger to allow gas to bypass the compressor.

12. (Original) A system in accordance with claim 1 further comprising: a temperature sensor operatively connected downstream from the heat exchanger to measure a temperature of gas downstream from the heat exchanger; and a heat exchanger bypass valve operatively connected between the inlet and the gas separation module to allow gas to bypass the heat exchanger, said heat exchanger bypass valve operatively connected to the temperature sensor for controlling the temperature of the gas received by the gas separation module based on the temperature of the gas downstream from the heat exchanger.

13. (Original) A system in accordance with claim 12 further comprising a processor operatively connected between the temperature sensor and the heat exchanger bypass valve for controlling operation of the heat exchanger bypass valve based on the temperature of the gas downstream from the heat exchanger.

14. (Original) A system in accordance with claim 1 further comprising a ground connection port operatively connected between the heat exchanger and the gas separation module for introducing air to the gas separation module from a pre-conditioned air source external to the vehicle.

15. (Original) A system in accordance with claim 1 further comprising a filter operatively connected between the heat exchanger and the gas separation module to filter at least one of entrained moisture and particulate contaminants from gas flowing between the heat exchanger and the gas separation module.

16. (Original) A system in accordance with claim 1 wherein the gas separation module comprises a permeable membrane gas separation module.

17. (Previously Presented) A system in accordance with claim 1 further comprising a ground connection port operatively connected downstream from the gas separation module for introducing nitrogen-enriched gas from a nitrogen-enriched gas source external to the vehicle to at least one of the fuel tank and the fuel tank vent, and to allow withdrawal of nitrogen-enriched gas from the nitrogen-enriched gas flow generated by the gas separation module.

18. (Previously Presented) An aircraft comprising:

an airframe;

a fuel tank mounted on the airframe;

a fuel tank vent operatively connected to the fuel tank; and

an inert gas generating system for generating inert gas on-board the aircraft, said inert gas generating system comprising:

an inlet for receiving a flow of air from an air source;

a heat exchanger downstream from the inlet and in fluid communication with the inlet for cooling air received from the inlet;

a gas separation module downstream from the heat exchanger and in fluid communication with the heat exchanger for separating air received from the heat exchanger into a nitrogen-enriched gas flow and an oxygen-enriched gas flow; and

valving operatively connected to the gas separation module selectively delivering nitrogen-enriched gas from the nitrogen-enriched gas flow to the fuel tank without delivering the nitrogen-enriched gas through the fuel tank vent, and selectively delivering nitrogen-enriched gas from the nitrogen-enriched gas flow to the fuel tank vent.

19. (Original) An aircraft in accordance with claim 18 wherein said inert gas generating system further comprises a ground connection port operatively connected between the heat exchanger and the gas separation module for introducing gas to the gas separation module from a pre-conditioned gas source external to the aircraft.

20. (Original) An aircraft in accordance with claim 18 wherein said inert gas generating system further comprises a ground connection port operatively connected downstream from the gas separation module for introducing nitrogen-enriched gas from a nitrogen-enriched gas source external to the aircraft to at least one of the fuel tank and the fuel tank vent, and to allow withdrawal of nitrogen-enriched gas from the nitrogen-enriched gas flow generated by the gas separation module.

21. (Original) An aircraft in accordance with claim 18 further comprising a gas turbine engine for propelling the aircraft and an environmental control system for conditioning bleed air

from the engine, wherein the air source includes at least one of the gas turbine engine and the environmental control system.

22-45. (Canceled)

46. (Currently Amended) An inert gas generating system for generating inert gas on a vehicle having a fuel tank, said system comprising:

an inlet for receiving a flow of gas having a nitrogen component and an oxygen component from a gas source;

a heat exchanger downstream from the inlet and in fluid communication with the inlet for cooling gas received from the inlet; ~~and~~

a gas separation module downstream from the heat exchanger and in fluid communication with the heat exchanger for separating gas received from the heat exchanger into a nitrogen-enriched gas flow and an oxygen-enriched gas flow, said gas separation module being configured ~~adapted~~ to generate a flow rate of the nitrogen-enriched gas flow of about 40 pounds per minute with an oxygen content less than or equal to about 9.8 percent by volume; and

valving operatively coupled to the gas separation module, the valving being configured to selectively deliver the nitrogen-enriched gas flow to the fuel tank without delivering the nitrogen-enriched gas flow through the fuel tank vent, and further configured to selectively deliver the nitrogen-enriched gas flow to the fuel tank vent.